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ABSTRACT

Educators are now realizing, due to recent technological advances in the cassette tape field, that they can have a complete and educationally sound lab system that will adapt to nearly any independent study situation without having to spend large sums of money. Under budgetary constraints and the desire to provide for a learning lab with the required hardware for an up-to-date program that will lend flexibility and options for future expansion, many universities are adopting the system of the "audiocassette rolling inventory library," which is based on high speed tape duplicators. Such installations result in cost reduction and simplification that were not available with previous complicated console switching systems. Ironically, even though the concept of the language or learning laboratory has proven itself and the hardware for these installations has undergone continual refinement over the years, the software has changed little. This paper describes an approach to the installation of such a learning lab and relates innovative uses of the format which can supplement conventional software sources. (Author)

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SPEEDING UP THE LANGUAGE LABORATORY

Harvey L. Hughett, Jr.

One of the greatest challenges in education today is the necessity of anticipating and planning facilities that will adapt to the continuing changes in the educational philosophies and which will fulfill the maximum number of educational objectives with the greatest flexibility, durability and ease of use.

As one talks with lab system distributors and manufacturers and looks over the various equipment brochures and compares system specifications, it is apparent that one could easily become confused during the selection of a system. Since program objectives vary from school to school, it would be foolish to assume that what works well at one institution would work well in all institutions. It is not uncommon for the advantages of a learning system to be lost or distorted during the evaluation-selection period due to the seemingly endless details that must be considered.

Some educators feel that it might be best to allow a technician to select a system that will last long enough to minimize the impact of the initial cost. The danger here is that the technician might choose technically good machines but an educationally poor system. For example, he might not see the need for an audio-active-record system with separate tracks for the student and master voices. From

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the technician's point of view, this would be a justifiable omission, since the simpler the system the easier the maintenance. Dr. Emilio De Torre of Queens College sums up the problem very well when he says that "On occasion the educator hands the technician a utopian list of system requirements, many of which might be technically impossible, or whose incorporation into the system would make it unnecessarily complicated and expensive. Very often the educator does not know what his objectives should be or what the various functions of a learning system can be. This may be due to a lack of awareness or because the expedient of time has not allowed him proper investigation."[1]

It is not surprising that substantial amounts of money are wasted each year on the purchase and installation of products that later prove to be inappropriate or ineffective.

In many applications I question the validity of the very complex and expensive learning lab systems. Too often they do not realistically meet pedagogical objectives, they tend not to be cost-effective, they are prone to malfunction, and may even intimidate the instructor with their complexity or the fear that machines might somehow replace the classroom teacher.

A few years ago I worked with a digital random access laboratory which cost more than $1,500.00 per student position. Even up to the present time, I question the advantage of a system which allows the learner to dial any one of 300 or so audio programs but which gives the student absolutely no program control once dialed.

Charles Hoban has said: "We need much more and much deeper conceptual analyses of our technologies, both in their formative and

in their operation stages. As of today, many of our 'innovations' are based on ad hoc conceptual chaos and that's why so many of them fail."[2]

I think that most of us realize that recent technological advances in the cassette tape field now make possible new systems that provide for high quality sound, dependability, low maintenance, and an extremely efficient audio library system.

A system which may be described as an "audio cassette rolling inventory library" is in its second year of operation here at VPI. What was once an outdated and often broken down language laboratory has expanded into an audio cassette library housing more than 2,000 programs. The cassette format has very effectively replaced the more complicated, more expensive and innefficient endless loop tape cartridge system and provides varied programs which supplement classroom instruction in foreign languages, music, English, engineering, etc.

The thirty (30) position laboratory is in operation fifty-six hours per week. Since September of last year, more than 25,000 students have used audio cassettes and tape machines, listening to more than 20,000 hours of materials.

The heart of the rolling cassette inventory lab system and the key to its efficiency is a Pentagon SRC-4250 combination high-speed tape duplicator. The Pentagon machine is designed to produce high quality copies from either reel-to-reel masters or cassette masters. The duplicating speed is eight times that of the original recording, permitting a C-60 cassette to be duplicated in less than four minutes. Since the SRC-4250 has three slave decks it is capable of producing up to nearly 3,000 cassette copies per week. Added slave

modules can be added to increase production capacity for larger requirements. This desk-top size machine has a quarter track head configuration for copying both voice and stereo music tapes. Simple controls provide for built-in flexibility of selective channel copying so that only the information on the selected tracks is copied. This permits the duplication of any track of a cassette program without affecting information on the other tracks. Solid state circuity with modular plug-in boards assures reliability and if servicing is necessary, any board can be replaced in minutes. The operating controls are no more complex than those of a standard tape recorder.

Near the lab tape copy checkout window there are two large cassette cases which may hold up to 2,300 cassettes. These cases hold working copies of programs being used by students at a particular time. Should there be a "rush" on a specific tape program, it is an easy matter for the lab assistant to "run off" ample copies in minutes to cover all requests. Tapes in low demand are bulk erased for recycling...Thus the term "rolling inventory." Such a system provides for flexibility and efficiency.

Through the use of such high speed duplicators it is a relatively simple matter to facilitate taped copies of uncopyrighted material to students and faculty. Students who desire tape copies for study at home or while traveling to and from school merely drop by the lab and leave their own blank C-60 cassette and a tape copy request form. If the lab assistant is not busy with other work at this time, the student may leave the lab within minutes with his personal tape copy to be used at his own convenience. Through such a medium it is also

possible for the instructor to provide special instruction at home for students who are physically handicapped or bedridden.

Since the high speed duplicator is the most vital link in the system and since even the best copiers may malfunction from time to time under heavy use, it is highly advisable, (In my opinion, it is mandatory!) to have a backup machine on hand. We use the more economical Pentagon C-140 high speed copier for such emergencies and for making single tape copies. A special cassette winder rewinds six tapes simultaneously saving wear and tear on more expensive machinery and provides for economy of workers time.

The laboratory operation is very similar to that of a conventional library; a student approaches a checkout window where cassette tapes are filed and requests the desired program. A lab assistant retrieves the tape program, files the student's I.D. card, and assigns a listening carrel.

Most language students are assigned to a carrel outfitted with a Wollensak 2526AV audio-active-compare tape deck. Contrary to the way some laboratory systems function, this setup gives the student complete control over the master program. He may start when he's ready, stop, backtrack at will, correct errors as they occur, and proceed at his own pace through any number of lessons without the danger of erasing the master program.

The student may record his voice, rewind the tape and listen, comparing his pronunciation and grammar with those of the master track. The approach of hearing one's own voice and instantly comparing it with that of a native speaker is invaluable in the learning of a foreign language.

A monitor output and a communication input line would allow all positions to have complete instructor contact if desired.

Music students and listen/only language students are directed to carrels that contain Wollensak 2516AV combination stereo/mono cassette decks. Good quality headphones coupled with a clean tape copy provide for a good audio program. As with the audio-active-compare decks, the student has complete program control and may listen to a particular passage any number of times. The dual purpose feature of these machines provides for constant flexible demand.

Upon finishing a lab assignment, the student returns the tape to the lab assistant and fills out a lab use report form. These forms are a necessary means of keeping track of program use and equipment wear, as well as providing detailed information to support future requests for purchases. The filing of student I.D. cards keeps machine vandalism and theft to a minimum.

"When language laboratories were first introduced, it was believed that if a student could listen to what he had said and compare it with what he was supposed to have said, then all problems in pronunciation would vanish overnight. But this never occurred"[3] Fantastic claims were never substantiated. Too much was expected of the impersonal language lab. I fully agree with Professor Arthur Gionet of the North Texas State University who states that "the use of the language laboratory can never fully reach its potential without the active involvement of the whole faculty in cooperation with the laboratory director and his associates."[4] Laboratory hardware alone is useless without properly constructed and supervised software materials. Professor Valette is very candid in a statement that

"the 'hardware' of the laboratory has undergone continual refinement over the past ten years, but the 'software' has hardly changed. The challenge of the next decade will be the development of imaginative and more effective tape programs."[5]

Many instructors throughout the country are finally realizing that all tape programs that accompany textbooks are not of the best quality. But how many instructors take the time to do something about it? Professor Theodore H. Mueller of the University of Kentucky has said: "The laboratory is at its weakest point when it is expected to perform the miracle of teaching the listening and speaking skills alone without the coordination and integration of classroom activities and materials."[6]

More and more teachers are discovering countless new uses for audio cassettes to augment classroom instruction. It is interesting to note that our French professors, under the direction of Dr. Lloyd Bishop, have produced their own second year lab exercises and tapes. The audio materials that they have put together supplement classroom lectures and discussions and appeal to students more than the usual materials available from book publishers.

As well as providing for the traditional learning lab function, the audio cassette library opens the way for several new and unique teaching/learning approaches. Professor Carl Shirley describes a system whereby "each student has a tape on file with his or her name and the course number written on it. The instructor assigns the students to attend the laboratory in order to record selected passages. When he wishes to check the progress of the students, he comes to the laboratory and listens to the tapes, perhaps recording corrections

and suggestions on the tape or writing a critique to be presented to the student at a later time. The flexibility of this system enables everyone, teacher and student alike, to work according to his own schedule; thus valuable class time can be spent in other ways. In addition, there is an accurate record of the student's progress during the semester."[7] This setup has also proved to be effective when used by professors who make audio-tape critiques of each assignment paper they correct. The student receives his corrected paper along with a cassette audio tape which he takes to a laboratory study carrel. This gives the student an opportunity to listen to the professor's criticism and suggestions as well as having the graded paper in front of him.

Instructors also use the Learning Lab to provide their students with supplementary exercises designed to cover difficult material in a more detailed manner. "By making a recording and placing duplicates on file in the audio library, the instructor makes information available for approximately 60 hours per week. Needless to say, even the most dedicated teacher cannot possibly be available in his office for such a lengthy period of time to review material for students on an individual basis. Clearly there is a point beyond which a student may not proceed without the physical presence of an expert, but the use of 'help tapes' in the learning laboratory provides needed access to competent instruction and desirable practice."[8]

Various professors stretch contact time with students by means of recorded exercises accompanied by special work sheets which must be completed in the lab. Students must complete the work sheets within

a given period of time and turn them in to the lab assistant who later distributes them to the instructors for correction.

Since the learning laboratory houses recorded cultural materials such as plays in the target foreign language, poetry, prose, music and lectures, students have access to a representative inventory of major works. The use of audio tapes makes the works more exciting since the student is able to listen and follow in his text simultaneously. Tape equipment which allows complete control of the program material allows the student to stop and review difficult passages and make notes for later reference.

The holdings also include a complete set of remedial English Grammar tapes and audio-lingual English exercises that may be used by students on a voluntary basis to brush up on most grammar points, the writing of term papers, special pronunciation helps, and so on.

Such a learning lab system as has been described provides for high quality sound, dependability, low maintenance, and above all, flexibility. The initial installation was wired by the university electric service and installed by the lab director and technicia. In the event a tape deck needs repairs, it is a simple matter to just "pull" the defective machine and replace it immediately with a spare deck kept on hand for that purpose. The defective dack can then be repaired by the lab mechanic without any significant "down time" for any listening position. It is to be noted that under the limitations of the previous console system, the entire lab frequently had to be closed before repairs could be made to a master channel.

Such an operation as has been described can be administered by a half-time director, a full time technician and audio program manager

and various federal work-study program students whose duties consist of manning the audio program checkout window, recording and duplicating tapes and checking out special equipment to faculty members.

Under the constraints of the budget and the desire to provide for a laboratory with the required hardwaee for an up-to-date program that will lend flexibility and options for future expansion, the rolling inventory library cassette system results in cost reduction and simplification that is not available with complicated console switching systems. Such a system as has been outlined can be implemented for considerably less than $20,000 by using existing carrels. We can see no reason why one can't have a complete and pedagogically sound laboratory system that will adapt to nearly any independent study situation without having to spend large sums of money.

FOOTNOTES

[1]Emilio De Torre, "Systems Clearinghouse: A Rationale, "NALLD Newsletter, VIII, No. 4(Summer, 1974), 22-23.

[2]Charles F. Hoban, "A Current View of the Future of Theory and Research in Educational Communication," Audiovisual Instruction, 19, No. 1, (January, 1974), 35.

[3]J.J. Higgins, A Guide to Language Laboratory Material Writing, Universitesforlaget, Oslo, 1969, p. 13.

[4]Arthur J. Gionet, "A Challenge to Language Learning Directors," NALLD Newsletter, IV, No. 3 (Spring, 1975), 9.

[5]Rebecca M. Valette, "Some Conclusions to be Drawn from the Pennsylvania Study," NALLD Newsletter, III, No. 3, 19.

[6]Theodore H. Hueller, "Correlating the Language Laboratory with the Textbook," Structural Drill and the Language Laboratory, Francis W. Gravit and Albert Valdman editors, Indiana University (Bloomington, Indiana, 1963), p. 83.

[7]Carl R. Shirley, "A New Face on the Old Language Lab: The Foreign Language Resources Center at the University of South Carolina," NALLD Newsletter, IX, No. 4, (Summer, 1975), 22.

[8]Shirley, p. 22.